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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,807	03/18/2004	Kunio Shigeta	08830.0015	5104

22852 7590 10/27/2006

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EXAMINER	
WALSH, RYAN D	

ART UNIT	PAPER NUMBER
2852	

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/802,807	SHIGETA ET AL.	
	Examiner	Art Unit	
	Ryan D. Walsh	2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *11-28,33-36,39,40,43 and 44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,30,32,37,38,41 and 42* is/are rejected.

7)☒ Claim(s) *29 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 6, 8-9, 37-38 and 41-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagaoka et al. (US Pat. # 5,724,635), hereinafter referred to as Nagaoka.

Regarding claim 1, Nagoaka teaches, "A development apparatus, comprising: a housing (Fig. 3, ref. # 11) including a developer supplying/collecting unit (1) and a developer stirring unit (14 and 2) arranged in a front-and-rear direction, the developer supplying/collecting unit and the developer stirring unit together forming a circular passage (see Fig. 4, "circle" formed around 15 by 13 and the combination of 14 and 2) for carrying a two-component developer including a toner and a carrier (Col. 2, Ln. 23-25); a developer carrying member arranged (5), at a front side portion of the developer supplying/collecting unit (1) to face an image carrying member (10) with respect to a development region; a developer supplying/collecting section (13) for carrying the developer in a rotation axis direction, the developer supplying/collecting section arranged at a rear side portion of the developer supplying/collecting unit to face the developer carrying member (5) and to extend along a rotation axis direction of the developer carrying member; a first developer stirring section (14) and a second

developer (2) stirring section arranged in a front-and-rear direction in the developer stirring unit to face each other and to extend along a rotation axis direction of the developer supplying/collecting section, the first (14) and second (2) developer stirring sections having peripheries that rotate and move the developer from an upstream side to a downstream side in a first developer carrying direction in the developer stirring unit; and a toner supply opening (60) formed above a position where the first and second developer stirring sections face each other and at the upstream side in the first developer carrying direction in the developer stirring unit, wherein the first developer carrying direction in the developer stirring unit is substantially opposite to a second developer carrying direction in the developer supplying/collecting section (see arrows in Fig. 4, near 14 and 2), and wherein an amount of the developer carried by the first and second developer stirring sections is equal to an amount of the developer carried by the developer supplying/collecting section (Col. 5, Ln. 41-67 and Col. 6, Ln. 1-53, since the amount carried towards 5 must be uniform to prevent blockage or buildup along one side of the housing, the members 13 and 14 must carry an equal amount of toner towards 5).

Regarding claim 2, Nagoaka teaches, "wherein the first developer stirring section carries the developer in a direction opposite to a direction in which the developer supplying/collecting section carries the developer (see arrows near 13 and 14, they are opposite), wherein an amount of developer carried by the first developer stirring section in the rotation axis direction is equal to the amount of developer carried by the developer supplying/collecting section (Col. 5, Ln. 41-67 and Col. 6, Ln. 1-53, since the

amount carried towards 5 must be uniform to prevent blockage or buildup along one side of the housing, the members 13 and 14 must carry an equal amount of toner towards 5), and wherein the second developer stirring section (2) carries substantially no developer in the rotation axis direction (acts as a stirrer, not a carrier, using members 2a)."

Regarding claims 3, 6 and 9, Nagoaka teaches, "wherein the second developer stirring section (2) is arranged at a rear side portion with respect to the developer supplying/collecting unit (see Fig. 4, area near 1)."

Regarding claims 5 and 8, Nagoaka teaches, "wherein the developer supplying/collecting section (Fig. 4, ref. # 1) includes a first stirring member (13) which extends spirally in the rotation axis direction throughout an outer periphery of a first shaft member, and the first stirring section (between 15 and 2) includes a second stirring member (14) which extends spirally in the rotation axis direction throughout an outer periphery of a second shaft member, the second stirring member carrying the developer in a direction opposite to a direction in which the developer supplying/collecting section carries the developer (see arrows near 13 and 14 in Fig. 4), wherein an amount of the developer carried by the second stirring member in the rotation axis direction is equal to the amount of developer carried by the developer supplying/collecting section (Col. 5, Ln. 41-67 and Col. 6, Ln. 1-53), since the amount carried towards 5 must be uniform to prevent blockage or buildup along one side of the housing, the members 13 and 14 must carry an equal amount of toner towards 5), and wherein the second developer stirring section (near ref. # 2, *claim 8: a rib is formed on*

an outer periphery of a third shaft member, this is met by Nagoaka ref. # 2 & 2a) plurality of plate-like stirring members (2a) with a third shaft member passing through (ref. # 2), the plurality of stirring members inclined in a same direction with respect to the third shaft member, and carries substantially no developer in the rotation axis direction (is a stirring member as described in Col. 5, Ln. 41-67 and Col. 6, Ln. 1-53)."

Regarding claims 37 and 38, Nagaoka teaches, "wherein, peripheries of the developer carrying member (5) and the developer supplying/collecting section (13) move in opposite directions with respect to each other at a position where the developer carrying member and the developer supplying/collecting section face each other (see Fig. 3, taking the point where 'dotted line 7' touches 5 as reference, 13 and 5 are moving in opposite directions)."

Regarding claims 41 and 42, Nagaoka teaches, "wherein, the housing (11) includes a partition (15) between the developer supplying/collecting unit and the developer stirring unit to avoid mixing the developer therein, the developer moves to portions of both the developer supplying/collecting unit and the developer stirring unit in a longitudinal direction (around 15); and a space is formed between the first (14) and second developer stirring (2) sections to allow the developer to freely circulate between the first and second developer stirring sections."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaoka (US Pat. # 5,724,635) in view of Kobayahsi et al. (US Pub. 2002/0098437), hereinafter referred to as Kobayahsi.

Regarding claims 4, 7 and 10, Nagaoka does not teach, "wherein the toner has a volume average particle diameter of 3 .mu.m to 5 .mu.m, and, the carrier has a volume average particle diameter of 5.times.Dt (mu.m) to 10.times.Dt (mu.m)." However, Kobayahsi teaches the deficiencies of Nagaoka (see Claim 14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nagoaka's invention to include wherein the toner has a volume average particle diameter of 3 .mu.m to 5 .mu.m, and, the carrier has a volume average particle diameter of 5.times.Dt (mu.m) to 10.times.Dt (mu.m).

The ordinary artisan would have been motivated to modify Nagaoka's invention in a manner described above for at least the purpose of reducing fogging or density variation of the toner, which would reduce image defects (see Kobayashi [0005]).

Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaoka (US Pat. # 5,724,635) in view of Tokimatsu et al. (US Pub. 2003/0219291), hereinafter referred to as Tokimatsu.

Regarding claims 30 and 32, Nagaoka teaches, "An image formation apparatus, comprising: an image carrying member (10); a toner image formation section for forming a toner image by developing an electrostatic image formed on the image carrying member (between 10 and 5); a transferring section (Col. 1, Ln. 15-27) for transferring

the toner image on the image carrying member to transferring material or an intermediate transferring member; a toner mixing opening (Fig. 3, ref. # 60) is formed above the position where the first and second developer stirring sections (2 and 14) face each other and at the upstream side with respect to the toner supplying opening in the first developer carrying direction in the developer stirring unit." Nagaoka does not teach, "a cleaning section for removing toner which remains on the image carrying member after the toner image is transferred; and a toner recycling section for collecting the toner removed from the image carrying member to be reused, and wherein in the housing of the development apparatus." However, Tokimatsu teaches the deficiencies of Nagaoka (Fig. 1, ref. # 81 and ref. # 8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nagaoka's invention to include a cleaning section for removing toner which remains on the image carrying member after the toner image is transferred; and a toner recycling section for collecting the toner removed from the image carrying member to be reused, and wherein in the housing of the development apparatus.

The ordinary artisan would have been motivated to modify Nagaoka's invention in a manner described above for at least the purpose of saving unused toner, enabling a longer usage period between refills.

Allowable Subject Matter

Claims 29 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Note: Regarding applicants arguments related to Suzuki (US Pub. 2002/0009309) and the claimed position of the 'toner supply port', Suzuki discloses a 'supplied port of toners' in Figure 3, which is above a position where the two stirring paddles 7 face each other. Although the port is not "directly above", the port is still above where the two paddles meet. This arrangement is similar to newly cited reference, Nagaoka (US Pat. # 5,724,635). Nagaoka's supply port 60 is above a position where, members 2 and 14 face each other.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan D. Walsh whose telephone number is 571-272-2726. The examiner can normally be reached on M-F 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on 571-272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ryan D. Walsh
Patent Examiner
Art Unit 2852

DAVID M. GRAY
SUPERVISORY PATENT EXAMINER